



선의 위상을 바꾸어 주는 파장판과, 이 파장판을 투과한 광선을 다시 상기 편광빔스프리터로 전반사 시키는 미러를 순차로 구비된 것을 특징으로 하는 슬림형 배면 투사 프로젝터.

## 청구항 2

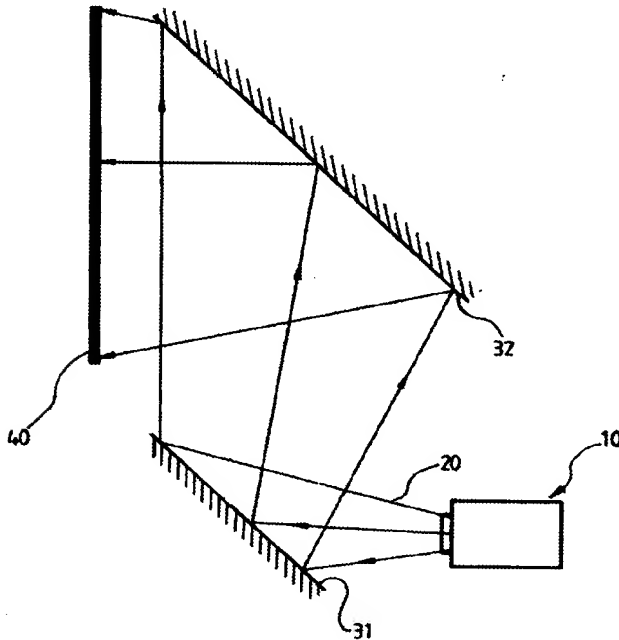
제1항에 있어서,

상기 파장판으로 1/4파장판을 사용하여 상기 편광빔스프리터에 재입사하는 광선의 편광이 180° 위상차를 가지도록 하는 것을 특징으로 하는 슬림형 배면 투사 프로젝터.

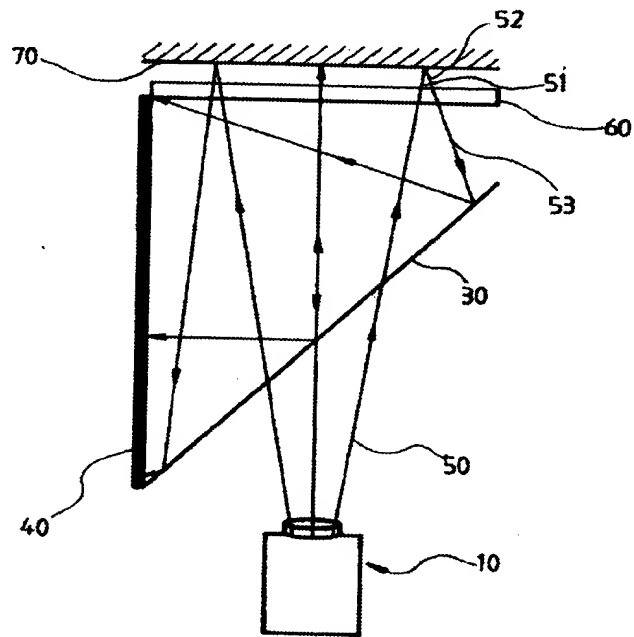
※ 참고사항 : 최초출원 내용에 의하여 공개하는 것임.

도면

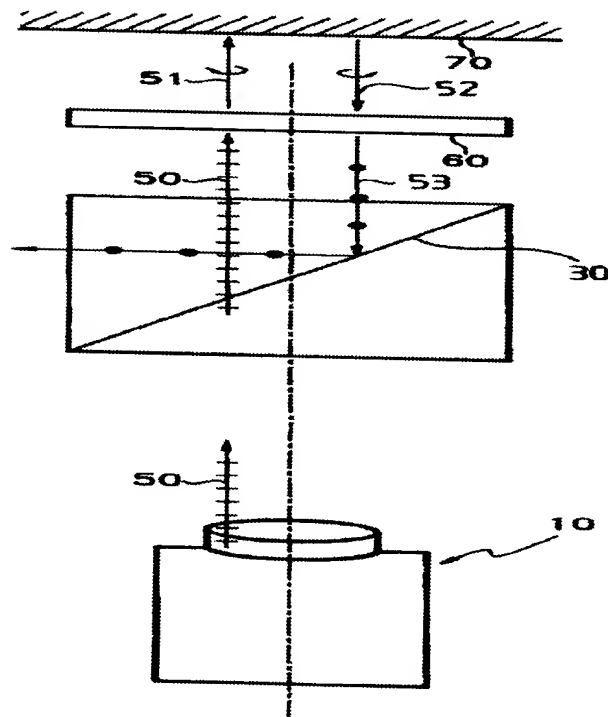
도면1



도면2



도면3



## KOREAN PATENT LAID-OPEN PUBLICATION

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Inventor: JUNG MYUNG-RYUL (KR)  
Applicant: SAMSUNG ELECTRONICS CO LTD  
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Application Date: August 13, 1994  
Title of Invention: SLIM TYPE PROJECTION APPARATUS

### [Abstracts]

The invention is directed to a slim type rear projection apparatus in order to reduce side width of a monitor.

The slim type rear projection apparatus has a polarization beam splitter(30), a wavelength plate(60), and a total reflection mirror(70) placed sequentially in the beam's path to enlarge images produced by liquid crystal elements. An incoming beam(50) and an outgoing beam(51) have different phases with respect to the wavelength plate(60), and every beam(53) passed through the wavelength plate(60) is directed to the beam splitter(30) by the total reflection mirror(70). The beam(53) which has a phase different to the incident beam(50) is totally reflected by the polarization beam splitter(30), and a viewer can see the images projected on the rear face of the screen(40).

Therefore, the above mentioned structure can provide a slim type rear projection apparatus which can reduce the side width of the monitor.

### [Claims]

1. A slim type rear projection apparatus that has a liquid crystal display projector for providing a diverging image, and a plurality of total reflection mirrors for securing the light path of the image projected from the projector, wherein an image of a given size is provided by projecting the image enlarged by the plurality of total reflection mirrors to the rear face of the screen, comprising:

- a polarization beam splitter which passes a particular polarized beam;
- a wavelength plate which changes a phase of an incoming beam; and
- total reflection mirrors which totally reflect the beam passed through the wavelength plate to the polarization beam splitter.

2. A slim type rear projection apparatus as defined in Claim 1, wherein the beam returned to the polarization beam splitter has a phase difference of  $180^\circ$  by an  $1/4$  wavelength plate used as the wavelength plate.